

REMARKS

Applicants respectfully request reconsideration of this application, and reconsideration of the Office Action dated February 8, 2005. Upon entry of this Amendment, claims 1, 5, 7-9, and 17-19 will remain pending in this application. Claims 2-4, 6, 10-16 and 20 are canceled. The amendments to the claims are supported by the specification and original claims. See, for example, Figs. 9-11 and corresponding description. No new matter is incorporated by this Amendment.

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Claim 1 is rejected under 35 U.S.C. §103(a) as purportedly obvious based on Darcie et al. (U.S. Patent 5,680,234) in view of Beller (U.S. Patent 6,388,741) and further in view of Ishikawa (U.S. Patent 6,269,204). Applicants respectfully traverse this rejection.

Claim 1 concerns an optical communication device for reflecting detection light of a given wavelength to a central station in order to find disorders in a light guide. The device includes at least one optical fiber for guiding signal light of a wavelength different from the detection light, as well as the detection light. It includes at least one ferrule for holding a part of the optical fiber near an end of such fiber, and a detection light reflecting grating located on the optical fiber between the ferrule and the optoelectronic device. The grating allows signal light to penetrate, but reflects the different-wavelength detection light back (via the same optical fiber) to the central station. This enables the central station to detect optical fiber disorders between the station and the claimed optical communication device (by receiving or not receiving the detection light).

As explained in the background and summary portions of their specification, Applicants have sought to produce an inexpensive component in an optical communication system. Their device conducts both detection light and signal light on the same optical fiber. They have appreciated the problem posed by location of a reflector (e.g., reflector 45 in prior art Figure 6) remote from the terminal end of the fiber. Again in Fig. 6, breaks in fiber portion 46 will not be detected from station 40 because they occur downstream of reflector 45. Applicants thus have arranged a device with a grating essentially at the terminal end of the fiber, i.e., "between the ferrule and the optoelectronic device", and have

used such ferrule to achieve inexpensive but accurate and reliable means of coupling between the fiber and the optoelectronic device.

Darcie neither teaches nor suggests a grating filter. Darcie's is a loop line wherein incoming and outgoing light is directed onto different paths. Applicants point out that since Darcie employs a closed loop, Darcie's device needs no reflector, let alone a fiber grating on a fiber end as set forth in claim 1 that selectively reflects only detection light. In addition, Darcie does not teach or suggest a ferrule for holding a part of the fiber, as Applicants claim. Darcie simply does not get to such level of detail.

Beller and Ishikawa fail to remedy the deficiencies of Darcie. Beller is more similar to Applicants' claimed invention in showing a bi-directionally propagating line, and also a fiber grating for reflecting the diagnosis light. Beller's gratings are shown only schematically and therefore cannot teach or suggest Applicants' recited location of their fiber grating at the end of the optical path (between the ferrule and an optoelectronic device). Beller likewise also fails to teach or fairly suggest a ferrule for holding a part of the optical fiber (near an end thereof).

Ishikawa, like both Darcie and Beller, fails to teach or suggest a ferrule for holding a part of the optical fiber near an end. Also, Ishikawa, like Darcie, omits a fiber grating. Therefore Ishikawa likewise cannot suggest Applicants' recited grating location as claimed, just as both Darcie and Beller are incapable of suggesting such. Thus, the newly-applied Ishikawa patent cannot make up for the deficiencies of Darcie and Beller with respect to Applicants' claimed arrangement of a fiber grating and ferrule. Hence, even when combined, the cited patents fail to teach or fairly suggest every feature of claim 1. There is nothing in the teachings of the cited patents which would have led those of ordinary skill in the art to the above described features of the present invention.

In view of these remarks, Applicants submit this rejection is overcome. They respectfully request that it be withdrawn.

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Claim 2 is rejected under 35 U.S.C. §103(a) as purportedly obvious based on Darcie et al. in view of Beller and further in view of Ishikawa, and further in view of Higahasi (U.S. Patent 5,937,120).

In addition, claims 3, 4, 6, and 10-16 are rejected under 35 U.S.C. §103(a) as purportedly obvious based on Darcie et al. in view of Beller and further in view of Ishikawa, and further in view of Komatsu (U.S. Patent 6,192,170).

Claims 2-4, 6, and 10-16 are canceled by this Amendment, thereby rendering these two rejections moot.

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Claims 17-20 are rejected under 35 U.S.C. § 103(a) as purportedly obvious based on Darcie et al. in view of Beller, Ishikawa, and Higashi, and further in view of Pimpinella (U.S. Patent 5,257,332).

Claims 5, and 7-9 are rejected under 35 U.S.C. §103(a) as purportedly obvious based on Darcie et al. in view of Beller, and Ishikawa, and further in view of Kato (U.S. Patent 5,859,945).

These two rejections are addressed together as similar issues apply to both. Applicants respectfully traverse both rejections.

The deficiencies of Darcie, Beller and Ishikawa are discussed above. Neither the Pimpinella nor the Katoh patent remedies these deficiencies. None of the applied patents teaches or suggests Applicants' claimed arrangement of a ferrule for holding a part of the optical fiber (near an end of the fiber) and a grating located between such ferrule and the optoelectronic device. Again, there is nothing in the teachings of the cited patents which would have suggested to those of ordinary skill in the art to have employed the above described features of the present invention.

Hence, in view of the above remarks, Applicants submit these two rejections also are overcome. Withdrawal of both is thus respectfully requested.

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Applicants respectfully submit that this Amendment and the above remarks obviate the outstanding rejections in this case, thereby placing the application in condition for immediate allowance. Allowance of this application is earnestly solicited.

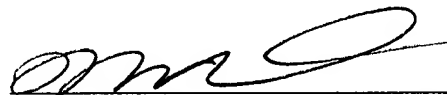
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Respectfully submitted,

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